

THE

November, 1954

CHEMIST

VOLUME XXXI



NUMBER 11



DR. LINCOLN T. WORK

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Volume XXXI

November, 1954

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Honorary Membership to Dr. Horace G. Byers, first AIC president.

Award of Chicago Chapter Scroll to Dr. Harold Urey.

Professional Standards and Attitudes, Dr. Wayne E. Kuhn, F.A.I.C.

IN THIS ISSUE

Editorials:

The Communications Problem, Dr. Donald B. Keyes	421
The Public Is Interested, V. F. Kimball	422
Dr. Robert E. Vivian Honored by Western Chapter	425
Educational Ills, Dr. Hubert N. Alyea	429
Education in Science (Booklets available)	433
Communications	438
Council	440
AIC Activities	442
Annual Meeting Committees	442
Problems in Chemical Education, Washington Chapter report	443
Process Inventor Speaks, Western Chapter report	444
Will you Come	444
For Your Library	446
Opportunities	448
Something New	449
Condensates	451

TO COME IN DECEMBER

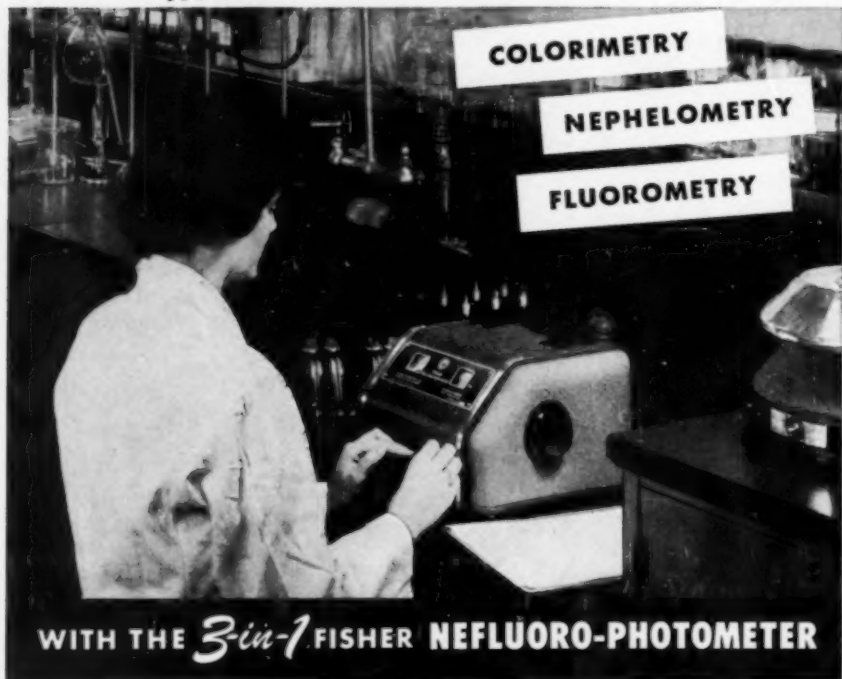
The first president of the Institute, Dr. Horace G. Byers, was selected to receive Honorary Membership at the 1954 Annual Meeting. His serious illness required an informal and immediate presentation of the scroll. This story and an account of his career by a close personal friend will bring a human interest tale especially touching at this season when sentiments are more acute and friends are remembered everywhere. Dr. Wayne E. Kuhn, F.A.I.C., will bring to this issue a fine discussion on "Professional Standards and Attitudes."

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Robert S. Aries & Associates.....	450	Mallinckrodt Chemical Works	
Baker & Adamson.....	Inside Front Cover		Inside Back Cover
Bios Laboratories	433	Molnar Laboratories	438
Commercial Solvents Corp.....	427	Phoenix Chemical Laboratories	443
Croll-Reynolds Co.	451	Robinette Research Laboratories.....	435
Evans Research & Development Corp.....	436	Scientific Glass Apparatus Co.....	423
Fisher Scientific Co.....	420	Foster D. Snell, Inc.....	449
Hardesty Chemical Division.....	452	Standard Scientific Supply.....	428
Johnson & Scudder.....	434	R. Steckler Laboratories.....	445
The Lento Press.....	437	Arthur H. Thomas Co.....	417
E. Machlett & Sons.....	424	Truesdail Laboratories, Inc.....	432
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EDITORIALS

The Communications Problem

Dr. Donald B. Keyes, F.A.I.C.

President, The American Institute of Chemists, Inc.

MANY years ago Charlie Parsons said to me, "Donald, you missed your calling, you should have been a labor leader." Yes, Charlie had a slight basis for his remark but we will not go into that.

After reading two excellent articles (*Chemical & Engineering News*, Nov. 8, 1954) on why and why not we as professional people should join a "professional" union, I was reminded of the fact that we are all interested in bargaining, whether collective or otherwise.

Perhaps you who found these articles interesting came to the fascinating conclusion that you would like to be a labor leader and bargain for a group of professional people. As a "past potential labor leader" may I point out the three principles upon which I believe you would have to operate to be a success.

(1) You must separate labor from management. You can operate as a labor leader only for labor. To put it crudely, you must separate the "sheep" from the "goats." A few "goats" in your organization are bound to cause you trouble. As most chemists and chemical engineers working in industry know they are part of management, you will have

plenty of troubles anyway.

(2) You must have "complete coverage", that is, *all* qualified people *must* and *should* be members of your union. This is the only way you can operate efficiently and effectively for obvious reasons. May I suggest that you don't stress this point at first; professional people especially don't like it.

(3) You must always consider your members as a class and never as individuals. Better stick to an age classification. It is simple and can be reduced to figures. Even then it is a complicated business but far simpler than evaluating an individual scientist or engineer. I know, I have tried it. All scientists and engineers I know are individualists and evaluate themselves, which will, of course, embarrass you.

The moral of my story is, "If you want to be a labor leader, choose a non-professional group."

Perhaps one of the reasons why some of us are interested in collective bargaining is because we are members of a large organization where the lines of communications have been broken. We can not get our bright ideas up to the top command and they can not get their policy ideas down to us without

appreciable delay. How to better this situation seems to be the real problem.

We all want to hear about your solution of this problem, so please

write your ideas to: Dr. George L. Royer (Chairman of the AIC Committee on Employer-Employee Relations), American Cyanamid Company, 30 Rockefeller Plaza, New York, N. Y.

The Public Is Interested

V. F. Kimball

UNDER the title, "Another Problem," in *THE CHEMIST* (August, 1954), Dr. Donald B. Keyes editorialized on "what can we do... to educate our good citizens unfamiliar with science and engineering to a realization of the fact that World War III will be won only if those organizations essential to our survival have capable men, young and old, in key positions?" He concluded that AIC members could solve this problem by educating their non-technical friends. He doubted that the wire services, the metropolitan dailies, or the *Saturday Evening Post* would quote chemists and chemical engineers on this problem, "even though they should because you know the solution."

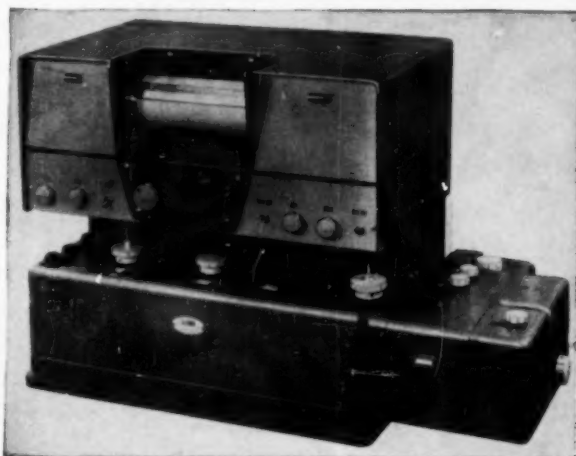
Since then, the *Saturday Evening Post*, Oct. 16, 1954, published an editorial on, "We Can't Afford to Draft Our Scientists," a splendid expression of the scientists' point of view, which is thus being called to the attention of more non-scientists

than individual chemists and engineers could ever contact.

In an editorial, "Welcome Support," Dr. Walter J. Murphy, Hon. AIC, editor of *Chemical & Engineering News*, (Nov. 15, 1954), calls attention to this and other recent articles in metropolitan newspapers and popular magazines, to show that, belatedly, the public is becoming concerned about the best use of scientific manpower. Incidentally, *Chemical & Engineering News*, of Nov. 1, 1954, contains a letter by Dr. Wayne E. Kuhn, F.A.I.C., entitled, "Age of Scientific Warfare," that treats, from a different angle, the place of the scientist in the military program.

Now all this popular interest does not mean that we as members of the INSTITUTE should cease our activities. An idea read in a newspaper or magazine is implemented far more effectively if it is confirmed by a neighbor who personally knows about the situation. Let us redouble our efforts to enlighten our non-scientific friends.

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CHEMICALS

Dr. Robert E. Vivian

Honored by Western Chapter

DR. ROBERT E. VIVIAN, dean of the College of Engineering at the University of Southern California, received the 1954 Honor Scroll of the Western Chapter of THE AMERICAN INSTITUTE OF CHEMISTS, at a meeting in Los Angeles, Calif., on May 27th.

Dr. Vivian worked his way through the University of Southern California by doing electrical work for the Los Angeles Gas and Electric Company. After receiving the M.A. degree in 1922, he acquired interesting experience when he served as head and chief chemist of the Kern County Assay Office; handled legal chemistry for the city and county courts; participated in the operation of gold and mercury mines; was secretary-treasurer of the Black Bob Mining and Milling Company; wild-cat scout for George F. Getty Oil Company, and assistant gas engineer for Pan American Petroleum.

In 1928, he went to Columbia University, New York, to do research for the Ph.D. degree in the Chemical Engineering Department. There he assisted Prof. Arthur W. Hixson in the process development course, and then became research assistant to Prof. Colin G. Fink, where he developed several processes on which patents were granted. He received the Ph.D. degree in

1933. From 1931 to 1935, he was research chemist and supervisor of research for General Chemical Co. of New York. The Metals Disintegrating Co., Elizabeth, N. J., employed him from 1935 to 1937, in the comparatively new field of the manufacture and utilization of metal powders.

In 1937, he returned to the University of Southern California as head of the Chemical Engineering Department. In 1940, he became acting dean of the College of Engineering and institutional representative of the Engineering, Science and Management Defense Training program for the United States Office of Education. In 1942, he became dean of the College, his present position.

He is also director of the Research Foundation for Cross-Connection Control and a member of the California Legislative Council of Professional Engineers. In 1952, he was made chemical production specialist for the Mutual Security Agency and sent on a U.S. Mission to Italy. From February to May, 1953, he served as technical consultant for the Mutual Security Agency on a mission to Japan, Formosa, Thailand, and Malaya. His specialties are engineering education; chemical engineering, especially electrochemistry and the uses of minerals



—S C Photo

Dr. R. P. Allard, Peter J. Stupin, Dean Vivian, and Dr. Harry L. Fisher

in the chemical industry.

Those participating in the award to Dr. Vivian were Dr. Romeo P. Allard, head of the Science Division and assistant dean of Loyola University, Los Angeles; Peter J. Stupin, chairman of the Western AIC Chapter, and research director of Calavo Growers; and Dr. Harry L. Fisher, Hon. AIC, head of the Rubber Technology Division, Engineering Department, The University of Southern California, and president of the American Chemical Society.

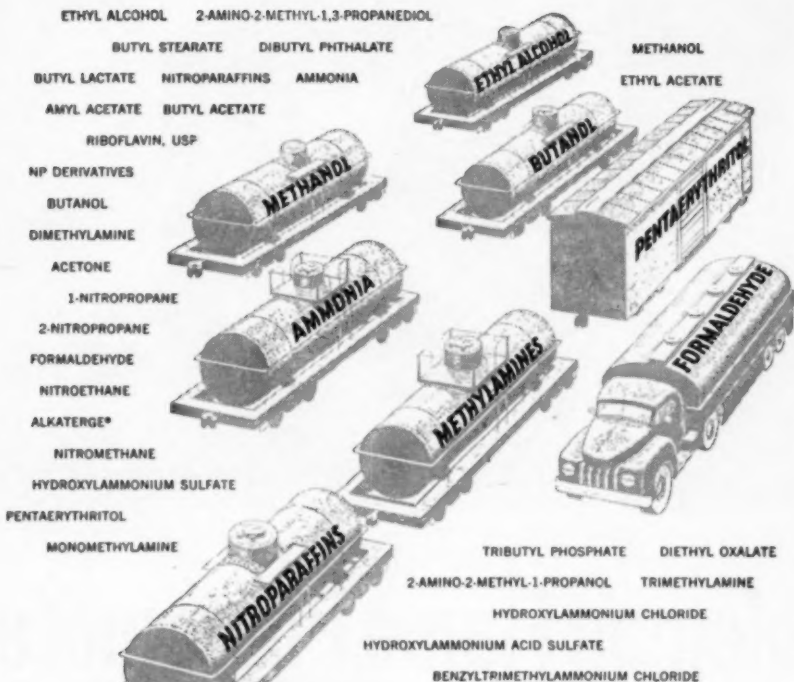
Dr. Vivian exhibited color slides and descriptions of his journeys in Asia.

The citation to him reads:

To Dean Robert Evans Vivian

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Educational Ills

Dr. Hubert N. Alyea

Frick Chemical Laboratory, Princeton University, Princeton, N. J.

(Given at the 1954 Annual Meeting of THE AMERICAN INSTITUTE OF CHEMISTS, Asbury Park, N. J., May 14, 1954.)

THE professional ills which beset our colleges often have their inception in high school, so that I wish to prescribe pills for ills at both these educational levels. Let me pinpoint two objectives.

Objective number one is teacher enthusiasm. Now the teacher is not the conventional target. Usually professional groups pick the student as the target. Get the student excited about science; take him on industrial trips; give him awards and prizes; stir him up to carry out all kinds of experimental projects. Although this may be important, to me it is only the side-show; under the main-tent, the spot-light should be on teacher enthusiasm.

This enthusiasm is engendered in several ways. In the small college the teacher needs more time for research. His administration expects him to be a professional baby-sitter: Camera club, debating society, orchestra, football, these activities rob him of necessary time for research. The pill for this ill is obviously to allow the teacher at least a quarter of his working hours for research.

Another ill, in many colleges, is to allow half-credit for laboratory contact hours. Administrators ap-

prove of this because they can assign twenty hours contact time, for which the unfortunate teacher receives only ten hours credit. This insidious practice precludes research.

Thirdly, provide the teacher with assistants. No industry is foolish enough—or if it is it will not long survive—to pay a chemist \$8000 a year and assign him \$2000 tasks. Many of you chemists would be amazed if you knew how much clerical work a person in a small college is forced to do. The pill for this ill is obviously to hire cheap hands to carry out cheap tasks, thereby releasing the teacher for research.

Finally, streamline the college curriculum. I recall a well-known technical school in the Mid-west offering courses in the chemistry of ice-cream making, and of cement mixes. One of their staff told me that he taught nine different courses each semester. Perfectly ridiculous. One solution is for small colleges to offer organic and analytical chemistry in alternate years, and in this way to cut down on teaching loads.

University problems are different. I have yet to find a State University where the teacher cannot get suffi-

cient time for research, provided he has proven his research mettle. Here the problem is one of promotion. The teacher who spends only a quarter of his time on research obviously publishes less than one who spends ninety percent of his time on research. The fellow with more publications gets to be better known about the country; and sooner or later he comes to the head of the department with this ultimatum: "Compare X has offered me \$10,000 a year. If you don't raise me from \$4000 to \$4500 I'm going to resign." What would you do if you were the department head? Inevitably a shotgun promotion follows, and the ill-fated teacher who has no competitive bids becomes disgruntled. His teaching is sure to suffer accordingly. A good teacher who is respectably active in productive research should have his teaching rewarded by promotions.

* * *

Objective number two is an enlightened Board of Education including those school principals who are the policy-makers. The boys and girls who come to us from high schools are often ill-taught. They're inaccurate. They're illogical. They're mathematically illiterate. They're socially very well adjusted, but that doesn't help a bit. Their high school curriculum has been planned for those nine out of their ten pupils who will not go on to college. This is particularly true of the small high

schools who cannot afford to offer both a terminal and a college preparatory course; and remember that 27,000 out of our country's 30,000 high schools have enrollments of under 300 pupils. The small high school of today trains for collective mediocrity instead of trying to build leaders. I mean they are so busy teaching living instead of leading that we end up with no leader.

Take mathematics, for example. Mathematics! illiteracy is the rule today. In his early high school years the pupil complains to his faculty adviser that mathematics is too hard, whereupon he is advised to drop it. By the time he reaches Junior year he cannot elect physics or chemistry because of insufficient mathematics. A potential scientist has miscarried. This reminds me of the story of the three football players who flunked out of college because of mathematics. "Those differential equations were just too stiff for me" said the player from MIT. Said the one from Notre Dame, "It was the integral calculus that threw me." But the player from Minnesota turned to his companions with, "Say, have either of you guys ever heard of long division?" Obviously the pill for this ill is more required mathematics.

Foreign languages should appear earlier in the curriculum. It is unwise to teach prospective scientists beginning German at the college level: This should have been done in

EDUCATIONAL ILLS

grade school. And those Boards of Education who, for supposedly patriotic reasons, delete German from the high school curriculum are performing a dis-service to the people of our country.

The teaching of English to budding scientists too, is unrealistic. How can we expect them to enjoy "The Mill on the Floss", or "A Tale of Two Cities?" Instead we should encourage them to read science classics: H. G. Wells' "The Invisible Man", A. Conan Doyle's "The Poison Belt", and Jules Verne's "Twenty Thousand Leagues Under the Sea." By this device our otherwise illiterate youngster unconsciously acquires a sturdy vocabulary.

.

Finally, we should provide the teacher with more time for intellectual leisure. I am sure that if for forty hours each week I had to combat a bunch of lively adolescents, uninterested in science, inside of three years I would resign my job. The high school teacher needs time for intellectual leisure; the college teacher already has it. How can we make this leisure possible. One way is by introducing television into our classrooms. This is something for the future. Unfortunately the present Governor of the State of New Jersey has seriously cut back any advance in this direction in our state, at least, when a few weeks ago he withdrew a \$100,000 appropriation

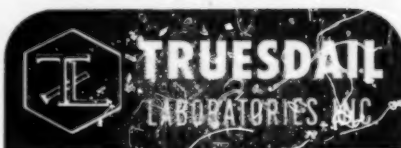
to educational TV, although Rutgers University has nearly a quarter-million dollars worth of equipment which must now be scrapped. Our Governor remarked at the time of his ill-advised action, "Never will a television tube come between the teacher and the pupil." Luckily for humanity, educational TV will survive and flourish in spite of such unfortunate opposition. I can envision TV relieving the teacher one day a week—or the morning of one day and the afternoon of another—so that he can better prepare his lessons, or devote time to scientific research. For example, there could be, at the high school level, on "Oxygen Week", a TV program which takes the pupil into an air liquefaction plant, an oxy-acetylene welding operation, a hospital oxygen tent, etc. In the English class Charles Laughton might give readings from Shakespeare. In American History the pupil would journey to Washington, D.C., via TV, to witness the House in session or to visit a prominent politician. There would be no conflict between TV and teacher — the pupils would quickly distinguish between the two. But the teacher could thereby spend an entire day each week, uninterrupted by class contact, in improving his teaching, or in research in a local college or industry. He would return to his high school classes with renewed enthusiasm.

.

How can your professional group, THE AMERICAN INSTITUTE OF CHEMISTS, promote teacher enthusiasm and enlightened Boards of Education?

You can act to encourage the teacher. In your industries do not merely hire him for the summer, but retain him on a year-round basis. It is not going to cost you a great deal. Pay the science teacher \$100 a month as a year-round consultant working two months during the summer at your plant. He may not know much, and he may get in your way when he comes around the plant; nevertheless, he may come up with a good screw-ball idea, or if not, he may send you an A-1 student later on. You will get your money's worth. And at the same time you will be investing him with a cloak of professional dignity. He will radiate enthusiasm as he returns to his class, after a visit as consultant to your plant, for he "belongs to the profession" in the eye of his pupils.

Encourage conferences which bring the high school and the college science teachers together. The Division of Chemical Education of the American Chemical Society has been active in this field for the past four summers; this summer it has organized such conferences in North Carolina, Ohio, and Wyoming, while the National Science Teacher's Association has organized one in the far west. The teachers are not only kept abreast with the advanc-



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ing fronts of science; they leave the conference with the pride of belonging to the profession.

Do all you can, as a professional group, to enlighten the Board of Education—and especially those school principals who are the policy-makers—to make possible teacher leisure and teacher enthusiasm; for until we have achieved these desiderata we shall not recruit top quality students to the profession of chemistry.

Past Accomplishments: Sometimes create today's problems in science, according to Jasper H. Kane, F.A.I.C., of Chas. Pfizer & Co., Brooklyn 6, N. Y. For example, the past work done in the prolongation of life poses today's problems of caring for increased numbers of the world's inhabitants. But, "I do not see how we can be pessimistic in the face of current achievements. We don't know what the new developments will be, but we are certain that they will come, and with them new opportunities . . ."

Education in Science

THE AMERICAN INSTITUTE OF CHEMISTS has a strong interest in promoting education in science. Many AIC members are active in the guidance of young people to careers in science and engineering. The booklets listed below may be useful for this purpose:

(1) *Encouraging Future Scientists: Materials and Services Available in 1954-55.* This lists sources of information on scholarships, student award contests, career guidance pamphlets, summer opportunities for high school students and teachers, etc.

(2) *Encouraging Future Scientists: Student Projects.* Numerous projects for local, state, and national science fairs are briefly described; ideas for other projects are suggested.

(3) *Careers in Science Teaching.* Opportunities and qualifications for this important profession are outlined.

These booklets may be obtained (\$0.50 each, \$25 per 100) from The Future Scientists of America Foundation of the National Science Teachers Association, 1201 Sixteenth St., N.W., Washington 6, D.C.

—DR. H. A. NEVILLE, F.A.I.C.

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fellowships in science and engineering during the 1954-55 school year, in midwest liberal arts colleges.

National Science Foundation, Washington 25, D. C., is selecting about 800 students with special abilities in science, for a year of graduate scientific study during the academic year 1955-56. Applications may be obtained from the Fellowship Office, National Research Council, Washington 25, D.C.

Ciba Pharmaceutical Products, Inc., Summit, N. J., announce that they have awarded \$122,500, in grants in 1954 to research workers and institutions throughout the U.S. for clinical and laboratory investigation.

Eli Lilly & Co., Indianapolis 6, Ind., has awarded research grants to a New York City hospital and eight universities, largely in the Middle West, for 1954-55.

Corn Products Refining Company has established a four-year, \$2,400 scholarship program at Illinois Institute of Technology, Chicago, to help relieve the shortage of science graduates.

The Johnson Foundation supported by S. C. Johnson & Sons, Inc., of Racine, Wis., have made scholarship grants totaling \$6,500. to undergraduate students majoring in chemistry at five colleges.

National Science Foundation has announced 216 grants totaling about \$2,650,000 for the support of basic research in the natural sciences and for other support of science in 1955, made to institutions and scientists throughout the U. S. and in two foreign countries.

Appointed: Fritz Rosenthal, F.A.I.C., as plastics research chemist in the Chemistry and Chemical Engineering Department of Armour Research Foundation, Chicago 16, Ill. He was formerly senior research chemist at the Nashua Corporation, Nashua, N.H.

Opened: By A. A. Saffitz, M.A.I.C., an office for the practice of patent and trademark law in the Munsey Building, Washington, D.C.

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Host: International Business Machines Corporation to the press, October 7th, in a preview of its new laboratories at Poughkeepsie, N. Y.

An experimental all-transistor calculator, about half the size of comparable vacuum tube units, was the featured demonstration. Specialists in various departments also demonstrated the new gas-tube counter used in statistical machines, the tiny magnetic core "memory" components, space-saving printed wiring panels, and other subjects of current research.

The modern, well-appointed U-shaped building adds 179,000 sq. ft. to available facilities, providing 155 research and testing laboratories for 600 engineers, chemists, and physicists.

The laboratory was formally dedicated on October 9th, in an address by Dr. James R. Killian, president of Massachusetts Institute of Technology.

Appointed: Richard N. Golbach as director of sales for Central Scientific Company, Chicago 13, Ill.

Cheating: What we are doing to our young people when we attempt to teach science without student laboratory experimentation, stated Dr. Raymond E. Kirk, F.A.I.C., dean of the graduate school of Polytechnic Institute of Brooklyn, N. Y. The 1954 winner of the Scientific Apparatus Makers Association award in chemical education, (administered by the American Chemical Society), also believes that recruitment of future scientists originates on the laboratory benches of our high schools and colleges, and that the most salient challenge to the science student is his own scientific laboratory work and observation, carefully guided and inspired and accurately recorded as a part of the learning experience.

Elected: Dr. Warren M. Sperry, F.A.I.C., professor of biochemistry, Columbia University, and head of the Department of Biochemistry, New York State Psychiatric Institute, as chairman of the New York Section of the American Chemical Society. He succeeded Emmett S. Carmichael, F.A.I.C.

Awarded: To Benno Lowy, F.A.I.C., owner of the Pacific Chemical Laboratories, San Francisco 11, California, the Doctorate in chemistry from the Technische Hochschule, Vienna, Austria. The dissertation was based on studies of turbidities in fermented beverages.

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Premedical Education: Will be the subject of a regional conference by Alpha Epsilon Delta, national pre-medical honor society, in cooperation with the American Association for the Advancement of Science, at the University of California, Wheeler Hall, Berkeley, Calif., Dec. 30, 1954.

Promoted: Walter N. Alexander, who has been appointed director of operational planning of the Dyestuff and Chemical Division of General Aniline & Film Corporation, New York, N.Y.

Elected: P. J. Wood, F.A.I.C., technical director of Royce Chemical Co., Paterson, N.J., as a fellow of the Textile Institute of London, England.

Golden Anniversary: Celebrated this year by the J. T. Baker Chemical Co., Philipsburg, N. J. The interesting history of the rise of this company is available from the company in a booklet, entitled, "Our First Fifty Years".

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Honored: Dr. Walter J. Murphy, Hon. AIC, American Chemical Society editor and president of the Society of Business Magazine Editors, who received the Scroll of Honor of the ACS Division of Industrial & Engineering Chemistry at a luncheon in New York, September 15th, in recognition of his services to the chemical profession. Donald I. Rogers, financial editor of the *N. Y. Herald Tribune*, was the principal speaker. He was introduced by James H. Stack, managing editor of the ACS News Service. C. J. Krister, chairman of the Division presided.

New Position: For E. J. Goett, F.A.I.C., who is now director of commercial development, Atlas Powder Company, Wilmington, Del. He was formerly with Charles Pfizer & Co., Inc., Brooklyn, N. Y.

Appointed: Dr. Robert Simonoff, F.A.I.C., as senior research chemist with L. Sonneborn Sons, Inc., Daugherty Refinery Division, Petrolia, Penn.

The Class of 1929: Found slim pickings in the depression but is now earning a median salary of \$10,000 to \$11,000 a year, according to a study of Illinois Institute of Technology engineering graduates by Earl C. Kubicek, director of placement. "By 1934, engineering graduates were receiving an average starting salary of less than \$100 a month. Today the 1934 graduates earn a median salary of \$8,500 to \$9,000." The 1954 graduates were offered an average starting salary of \$362 a month, and today engineers rank with physicians, dentists, and lawyers, in the upper income bracket among college graduates.

Lectures: On Chemistry and Physics of High Polymers, being held at the National Bureau of Standards, Washington 25, D.C., in the Materials Testing Laboratory, at 2:30 p.m., on the designated days, and open to the general public: Dec. 6, 1954; Feb. 7, 1955; Mar. 7, 1955; Mar. 28, 1955, and May 2, 1955. Information may be obtained from Dr. Leo A. Wall, Polymer Structure Section, National Bureau of Standards, Washington 25, D.C.

Announced: By Dr. Harold K. Work, F.A.I.C., director of the Research Division of New York University, the opening of a new division laboratory for surface technology research.

Officers: Of the Association of Consulting Chemists and Chemical Engineers, Inc., 50 E. 41st St., New York 17, N. Y., elected in October, 1954, are: President, Charles Davidoff; Vice President, Dr. Lincoln T. Work, F.A.I.C., Secretary, Elliot A. Haller; Treasurer, Percy E. Landolt, F.A.I.C. Councilors are: Dr. A. W. Fisher, F.A.I.C., Sidney P. Lee, F.A.I.C., George H. Morse, A. Rooseboom, and Abraham Taub, F.A.I.C.

Planned: By Battelle Institute, Columbus, Ohio, a \$1,535,000 expansion of its nuclear-energy research facilities. Construction of a nuclear reactor, a reactor development laboratory, and a nuclear fuels laboratory will begin shortly.

Purchased: By Heyden Chemical Corporation, 342 Madison Ave., New York 17, N. Y., the common stock of Nuodex Products Co., Inc., of Elizabeth, N. J. Nuodex will be operated as a division of Heyden. Leo Roon, F.A.I.C., president of Nuodex, retires from active participation in business.

Appointed: Dr. Per K. Frolich, vice president, Merck & Co., Inc., Rahway, N. J., as deputy chief chemical officer for scientific activities and chief scientist for the Chemical Corps, Department of the Army, Washington 25, D. C.

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Elected: Harry Burrell, F.A.I.C., of the Ohio AIC Chapter, as vice chairman of the Organic Coatings Section of the Gordon Research Conferences, in New Hampton, N. H., on July 15th. He will be vice chairman for the 1955 Session and chairman for the 1956 Session. Attending the conference from the Ohio Chapter were Dr. E. G. Bobalek, F.A.I.C., and Harold M. Olson, F.A.I.C.

Chairmanship: Of the Chemical Division of the Committee of American Industry, division of National Fund for Medical Education, 2 W. 46 St., New York 36, N. Y., accepted by Fred J. Emmerich, Hon. AIC, president of Allied Chemical & Dye Corp. The Committee of American Industry is conducting a nationwide appeal to raise \$10,000,000 for the eighty medical schools in this country.

Additional Space: Leased by Foster D. Snell, Inc., at 42 West 15th St., New York, N. Y., to accommodate expanding engineering department.

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Planned: By Standard Oil Company (Indiana) and Sinclair Refining Company, the joint construction of a large ammonia plant near Hammond, Indiana, to which both refineries will feed by-product hydrogen and other gases by pipeline to produce 300 tons a day of anhydrous ammonia.

Moved: The N. Y. Sales Division offices of U. S. Industrial Chemicals Co., division of National Distillers Products Corp., to 99 Park Ave., New York 16, N. Y.

Opened: In Irwin, Pa., on September 23rd, the \$1,000,000 research center of Robertshaw-Fulton Controls Co., New York 36, N. Y.

Meeting Dates: For the Society for Applied Spectroscopy are: Dec. 7, 1954; Jan. 4, 1955; Feb. 1, 1955; Mar. 1 or 8, 1955; April 5, 1955, and May 12-13, 1955. Information may be obtained from C. A. Jedlicka, Secretary of the Society at U.S. Testing Co., Inc., 1415 Park Ave., Hoboken, N. J.

Communications**A Myco's Gonna Git Yer,
Ef Yer Don't Watch Out!**

Apologies to James Whitcomb Riley

In T.B. and in Leprosy
We see without a murmur,
An acid-fast bacillus red,
Found, too, in Scleroderma
How acid-fasts, in Cancer cells,
Have yielded to detection,
And scotched the long-used slogan that
"Cancer is no infection."
The cancer germ rides in the blood,
Producing its metastases—
Unknown, unseen, it has its way
Of bringing on catastrophes.
We know there's Mycos all around
A-huntin' for their prey—
Their polymorph disguises fool
The doctors every day.
Be sure you test for acid-fasts
Before you start to shout,
Or a Myco's gonna git yer, ef
Yer don't watch out.

—JEROME ALEXANDER, HON. AIC

EDITOR'S NOTE: His many friends will be sorry to know that Mr. Alexander is confined to the Lenox Hill Hospital, New York, N. Y., with an operation scheduled for November 8th.

On Scientific Manpower

To the Editor:

The articles by Drs. Keyes and Shepard (September CHEMIST) were of especial interest. May I take this opportunity to comment on the letter received from General Hershey (p. 380 of that issue). It may be inconceivable that responsible individuals would charge public officials with disregard of the law, but to responsible scientists and engineers, it is inconceivable that General Hershey should administer the Universal Military Training and Service Act by its title rather than by its provisions. It is equally inconceivable that he should expect the Congress to follow his maladministration of the selective provisions of the law and pass corrective legislation before they have had cumulative evidence of maladministration extending over a considerable period of time. General Hershey fails to mention one most

COMMUNICATIONS

important consideration—namely, that he is responsible to the President of the United States and not to the Congress—and he fails to mention that the President has already seen fit to endorse corrective action in the General's policy with respect to graduate students. Apparently, dissatisfaction with the General's interpretation of the law exists not only among professional groups, but in some government circles as well. General Hershey's silence on such matters is understandable.

—HOWARD A. MEYERHOFF,
*Executive Director,
Scientific Manpower Commission*

On Chemical Sales

(Items garnered from the Second Chemical Sales Clinic of the Salesmen's Association of the American Chemical Industry.)

Competitive selling is an instrument to keep the United States relatively depression free, according to Robert A. Hardt, vice president of Hoffmann-LaRoche, Inc.

"Today's number one problem of the chemical industry is a real shortage of top-flight sales executives. Many companies are working at a solution of their executive problem through manager development programs, but at best they may take from five to ten years to remedy this deficit."

—ROBERT F. MOORE
Richardson, Bellows, Henry
& Company

The chemical industry is fast approaching the time "when no amount of selling effort, promotion or advertising can sell all the goods it can produce."

—DAN M. RUGG, JR.
Time, Inc.

"Without adequate incentives to its men in the field, the chemical industry is not likely to realize its maximum sales volume. More than half the sales personnel are on a straight salary. In the rest of industry, more than half the salesmen are paid a combination of salary and commission or salary and bonus. I believe top

management in our industry will develop mutually advantageous plans to reimburse salesmen partially with some form of incentive pay for above average performance."

—C. E. AVERY
The Pfaudler Company

"The need for creative selling has never been more evident than it is now in the chemical industry."

—H. D. HUGHES
Carbide & Carbon
Chemicals Company

"The salesman is the channel of communications between management and the most important part of its business — the customer. To avoid, or at least, to minimize these serious movements between prosperity and depression, management depends heavily upon its sales organization for assistance in planning, budgeting, and research orientation."

—JOHN D. FENNEBRESCQUE
Celanese Corporation of America

The chemical industry is turning more and more to technically trained men for its sales personnel, revealed John F. Crowther of Stauffer Chemical Company, who conducted a survey to find this out.

"Buyers and Sellers in the chemical industry are charged with the responsibility of contributing their part to the better distribution of goods and the general advancement of people's well being."

—HAROLD K. LAROWE
American Cyanamid Company

"As profit margins on commodity-type products keep narrowing, chemical manufacturers will be forced to find more economical distribution methods."

—W. CAMERON CASWELL
McKinsey & Company

One of the most important challenges facing sales executives today is to encourage the regrowth of imagination in their salesmen, according to C. B. Larabee of *Printers' Ink*.



COUNCIL

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President-elect, Ray P. Dinsmore

Secretary, Lloyd Van Doren
Treasurer, Frederick A. Hessel

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Washington Chapter
M. Sittenfield, *Pennsylvania Chapter*
W. J. Sparks, *At-Large*
Charles L. Thomas, *At-Large*
R. W. Truesdail, *Western Chapter*
Florence E. Wall, *At-Large*
Albin H. Warth, *Baltimore Chapter*
L. T. Work, *Past President*

September Meeting

The 280th meeting of the National Council of THE AMERICAN INSTITUTE OF CHEMISTS was held September 16, 1954, at 6:00 p.m., at The Chemists' Club, New York, N. Y. President Donald B. Keyes presided.

The following councilors were present: J. B. Allison, J. R. Bowman, R. P. Dinsmore, L. H. Flett, K. M. Herstein, F. A. Hessel, D. B. Keyes, G. A. Kirton, J. H. Nair, E. Ott, D. Price, M. Sittenfield, W. J. Sparks, L. Van Doren and L. T. Work. Dr. L. T. Eby, chairman of the Membership Committee; Dr. M. J. Kelley, chairman of the Committee on Manual of Chapter Operations, John Kotrady, chairman of the New York Chapter, K. Newman, chairman of the Western Chapter; A. F. Parks, alternate for the Washington Chapter representative; George Perry,

guest; Benjamin Sweedler, chairman of the Committee on Constitutional Revision, and V. F. Kimball were present.

The Secretary reported that we have a total of 2736 members. He announced with deep regret the deaths of the following Fellows: Harry C. Kofke, in Jan. 1954; Clifford A. Stewart, Feb. 19, 1954, and Lawrence W. Devaney, May 24, 1954.

The Secretary reported that he had received a reply from Gen. Hershey in response to the recent letter sent to him. (See page 344, August, issue of THE CHEMIST, and page 380 of the September issue.) In view of the general situation the Engineering Manpower Commission, the American Chemical Society and other groups will formulate some concrete suggestions. Dr. Keyes asked the Council to be ready to consider these suggestions when they are available.

COUNCIL

Dr. Dinsmore reported that the Program Committee for the Annual Meeting in Chicago is working on the theme of a program based on papers about what the scientist needs, what he is trying to do, and what his obligations are to society.

Mr. Sweedler reported that a total of 813 ratification ballots for Constitutional amendments, adopted at the Annual Meeting, had been received, and that 791 of these approved all the amendments. Twenty-two ballots indicated approval of one or more of the amendments.

Mr. Sweedler stated that the amendments to the By-Laws, to bring them in line with the revised constitution, must be approved by a majority of those present at two successive Council meetings to be effective. The amendments were then approved and referred to the October meeting of the Council for final action.

Dr. Keyes introduced the new chairman of the Membership Committee, Dr. L. T. Eby, who stated that he would like to have a representative from each Chapter to facilitate his membership work.

Mr. Herstein, representative from the New York Chapter, announced that on January 20th, the New York Chapter will sponsor the presentation Honorary Membership to Dr. Milton C. Whitaker, F.A.I.C.

Mr. Kotrady presented the councilors with copies of the meeting schedule of the New York Chapter for the current year.

President Keyes appointed Mr. Herstein as chairman of a new Committee on Inter-Chapter Relations, to confer with the various chapters, "to learn from what other chapters are doing."

Dr. Newman, chairman of the Western Chapter, reported that this Chapter will meet on October fifth.

Mr. Kotrady, chairman of the New York Chapter, stated that the AIC Luncheon on September 16th was a most successful affair. One-hundred and forty-five persons were present. Dr. Wayne E. Kuhn was the chief speaker, and Dr. E. J. Durham served as honorary chairman.

Mr. Sittenfield reported that the Pennsylvania Chapter will meet October 7th, when Dr. C. C. Price will speak on "Science, Power, and Freedom." The Chapter's Honor Scroll will be awarded on December 2nd.

Dr. Allison expressed the appreciation of the New Jersey Chapter for the privilege of acting as host for the 1954 Annual

Meeting. The Chapter is proud of its study of the chemist in the State of New Jersey, which indicated that chemists are as normal as other professional people.

Dr. Dinsmore stated that one of the primary purposes of the INSTITUTE is to place emphasis on the personal integrity of the scientist.

The following dates were selected for meetings of the National Council during the fiscal year: Oct. 27, 1954; Dec. 15, 1954; Feb. 9, 1955; April 13, 1955, and May 12, 1955.

Dr. Newman was asked to obtain the story on the possible registration of chemists in California and to inform the Council.

Dr. Parks was asked to obtain a statement on the Civil Service Commission standards for chemists, as available from the Washington Chapter, and to report to the Council.

The following new members were elected:

FELLOWS

Bishop, Hazel

Own laboratories, 22 West 22nd St., New York 10, N. Y.

Eny, Dr. Desire M.

Chemical Corps, Engineering Agency, Bldg. 250, Army Chemical Center, Maryland.

Girardot, Dr. Peter R.

Bjorksten Research Labs., 323 W. Gorham St., Madison 3, Wisconsin.

Hersh, Dr. Joseph M.

Cities Service Research & Development Co., Inc., P. O. Box 309, Camden 1, New Jersey

Menolasino, Dr. Nicholas J.

Head, Div. of Serum Research, Mt. Sinai Medical Research Foundation, 2750 West 15th St., Chicago 8, Illinois.

Mumford, Russell W.

Vice-President Consulting Engineer, American Potash & Chemical Corp., 3030 West Sixth St., Los Angeles 54, California.

Nishimura, Masao

The Griffith Labs., Inc., 1415 West 37th St., Chicago 9, Illinois.

Shaffer, Dr. Sherman S.

Humble Oil & Refining Co., Baytown Research Center, Baytown, Texas.

MEMBERS

Dyer, Gloria Joan
Technical Assistant, Bell Telephone Labs., Murray Hill, New Jersey.

Dyer, John Spiers, Jr.
Chemist, Keuffel & Esser Co., Third & Adams St., Hoboken, New Jersey.

Elder, Nathan Ryals
Analytical Chemist, U. S. Naval Powder Factory, Indian Head, Md.

O'Connor, John J.
Chemist, Keuffel & Esser Co., 300 Adams St., Hoboken, New Jersey.

Reardon, Edward J.
Chemical & Engineering News, 1155 16th St., N.W., Washington, D.C.

Ricci, Daniel James
Analytical Chemist, U. S. Customs Lab., 201 Varick St., New York, N. Y.

Wahlers, Frederick
Assistant Sales Manager, Merchants Chemical Co., 60 East 42nd St., New York 17, New York.

ASSOCIATES

Kashiwabara, Thomas Taro
Chemist, Keuffel & Esser Co., 300 Adams St., Hoboken, New Jersey.

Lo Monte, James Robert
Chemist, Keuffel & Esser Co., 300 Adams St., Hoboken, New Jersey.

RAISED FROM MEMBER
TO FELLOW

Barry, William Denan
Chief Chemist, The Van Iderstine Co., Review Ave., Long Island City 1, New York.

Fahrenbach, Dr. Marvin Jay
Research Chemist, Lederle Labs Div., American Cyanamid Co., Pearl River, New York.

RAISED FROM FELLOW
TO LIFE MEMBER

Cottle, Dr. Delmer L.
Research Chemist, Standard Oil Development Co., Esso Labs., Linden, New Jersey.

AIC Activities

C. P. Neidig, F.A.I.C.

Chicago Chapter

Chairman, Dr. Lloyd A. Hall
Chairman-elect, Clifford A. Hampel
Vice Chairman, Dr. Harold M. Coleman
Treasurer, Albert S. Henick
Secretary, John Krc, Jr.
Armour Research Foundation
10 West 35th St., Chicago 16, Ill.
National Council Representative:
Dr. Gustav Egloff

Collective Bargaining

The Chicago Chapter meets, November 10th, at the Chicago Engineers Club, to hear the arguments, pro and con, on "Collective Bargaining for Professional Chemists." The speakers are Brice Gilman, Research and Engineering Employees Association, and Albert I. Kegan of the law firm of Kegan and Kipnis.

Annual Meeting Committees

The following appointments have been made to committees for the 1955 AIC Annual Meeting, to be held at the LaSalle Hotel, Chicago, Illinois, May 11-13, 1955:

Honorary Chairman, Dr. Gustav Egloff
General Chairman, Dr. Roy C. Newton
Chairman of Program Committee, Dr. Ray P. Dinsmore
Co-chairman of Program Committee, Dr. Bernard S. Friedman
Chairman of Arrangements, Edward L. Gordy
Treasurer, Dr. Herman S. Bloch
Chairman of Registration, Dr. Waldersee B. Hendrey
Chairman of Publicity, Frank C. Byrnes
Chairman of Special Events, Herbert F. Schwarz
Honorary Chairman, Ladies Committee, Mrs. Lloyd A. Hall
Co-chairmen, Ladies Committee, Mrs. Bernard S. Friedman
Mrs. Herman S. Bloch
Ex-Officio Member of Committees, Dr. Lloyd A. Hall, Chairman, Chicago Chapter

Ohio Chapter

Chairman, Dr. David M. Gans
Chairman-elect, Malvern J. Hiler
Secretary-Treasurer, Harold M. Olson
Harshaw Chemical Co.
1945 E. 97th St.,
Cleveland, Ohio
National Council Representative:
Guy A. Kirton

The Dinner of the Chemical Profession

The Sixth Annual Dinner of the Chemical Profession in Cleveland, sponsored by the local sections of The American Chemical Society, The Electrochemical Society, Alpha Chi Sigma, The American Institute of Chemical Engineers, and THE AMERICAN INSTITUTE OF CHEMISTS, will be held November third. This joint society dinner, now an annual tradition, is one of the means of promoting liaison between different societies with respect to common interests concerned with the professional status and civic responsibilities of chemists in Cleveland.

Dr. Ivor Griffith, F.A.I.C., president of The Philadelphia College of Pharmacy, will give the program lecture. He has made extensive scientific studies in gerontology and geriatrics and will consider some aspects of this field in his address, "Live Longer and Like It." In addition to his pioneering accomplishments in the fields of research, education, and as editor of scientific journals, Dr. Griffith is known for his skill as an author and lecturer in interpreting science accurately to popular as well as scientific audiences.

Washington Chapter

President, Paul E. Reichardt
Vice President, Dr. Frank Gonet
Treasurer, Albert F. Parks
Secretary, T. Allan Davis
1016 Urell Place, N.E.
Washington 17, D.C.
National Council Representative:
Paul E. Reichardt

Problems in Chemical Education

The opening meeting of the season for the Washington Chapter was held at O'Donnell's Sea Grill, Oct. 12, 1954, during the noon hour. President Paul E. Reichardt introduced Dr. B. D. Van Evera, F.A.I.C., who spoke on "Problems in Chemical Education."

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In his talk, he covered such points as:

- (1) The difficulty in getting good teachers vs. those who want to do research.
- (2) Low educational salaries, a serious obstacle.
- (3) Large increase in registration due to returning veterans and culling out of teachers when enrollments dropped.
- (4) Prospects of a large increase in the number of students without proportional increase in the number of teachers and laboratories.
- (5) High cost of instruction in chemistry inherently due to needs for small classes, required laboratories, and costly laboratory equipment.
- (6) The difficulties of training chemistry teachers as to (a) subject matter that needs to be taught: Fundamental principles vs. specialization, (b) integration of chemistry into the curriculum, and (c) requisite of getting pupils to think, to acquire the philosophy of science, rather than to be trained as operating chemists.
- (7) Difficulty of keeping up-to-date in chemistry.
- (8) A.C.S. approved courses.

Dr. Van Evera answered many interesting questions at the close of his talk.

November Meeting

The Washington Chapter will meet on November 9th, to hear Carl G. Morrison, director of Chemical & Rubber Division of Business and Defense Services Administration, U. S. Department of Commerce, speak on "Chemists and Chemical Engineers in Industry."

Mr. Morrison, on loan from Enjay Company, is serving the government for six months without compensation under a rotation system whereby services of outstanding businessmen and industrialists are provided without cost to the Government. In his industrial experience, he has

been actively engaged in the production of chemicals and rubber required for the military program, and has been associated with the process, mechanical, technical and employee relations division of his company.

Western Chapter

Chairman, Dr. Kenneth W. Newman
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Los Angeles 65, Calif.

National Council Representative:
Dr. Roger W. Truesdail.

Process Inventor Speaks

A new process of chemical machining has brought to the aviation industry a remarkable concept of tooling and fabrication. Previously impossible structures are now commonplace to produce. Machining operations formerly requiring immense skin mills can be made with relatively simple chemical tooling, according to the "Chem-Mill" developer, Manuel C. Sanz, at the October fifth meeting of the AIC Western Chapter in Los Angeles.

This process was originated by North American Aviation and developed in conjunction with Turco Products, Inc., Los Angeles manufacturer of industrial chemical compounds. Designed to replace the costly milling machine in many operations, the Chem-Mill Process offers contouring without the application of any physical force. Parts emerge from the chemical bath smooth and perfectly formed. Equipment costs are low and facilities can be quickly installed. During periods of machine tool shortages, as in national emergencies, Chem-Mill equipment can be set up in a matter of days.

The new Chem-Mill process offers money-saving advantages over machining and minimizes the length of set-up time encountered in preparing milling machines to be operated and eliminates the need for expensive milling equipment. It is also ideal for the mass production of parts, since many components of various sizes and shapes can be processed simultaneous-

ly, the number being limited only by the size of tanks.

Perhaps the greatest advantage afforded by use of the process is that it can be used to produce precision contouring of forgings or intricately shaped and curved aluminum sheets. It permits the holding of close tolerances on almost any desired complexity of design; permits weight savings and advanced design not possible with conventional machine milling; permits tapering, curving and other intricate shaping, often impractical with ordinary equipment. While Chem-Mill is being confined at present to aluminum alloys, its application to other metals is being developed.

Will You Come

Nov. 3, 1954. Sixth Annual Dinner of the Chemical Profession in Cleveland, Ohio, sponsored by the local sections of the American Chemical Society, The Electrochemical Society, Alpha Chi Sigma, the American Institute of Chemical Engineers, and The American Institute of Chemists. Speaker, Dr. Ivor Griffith, F.A.I.C., president Philadelphia College of Pharmacy, "Live Longer and Like It."

Nov. 9, 1954. Washington Chapter Luncheon. O'Donnell's Sea Grill, Washington, D.C. Speaker, Carl G. Morrison, director of Chemical & Rubber Div., Business & Defense Services Administration, U. S. Dep't. of Commerce, "Chemists and Chemical Engineers in Industry."

Nov. 10, 1954. Chicago Chapter. Engineers Club. Subject: "Collective Bargaining for Professional Chemists." Speakers: Brice Gilman of Research & Engineering Employees Association, and Albert I. Kegan of the law firm of Kegan and Kipnis.

Dec. 2, 1954. Pennsylvania Chapter. Award of the Chapter's Honor Scroll to Dr. Arthur Osol, director, Chemistry Department, Philadelphia College of Pharmacy and Science. Reception and dinner at the Penn Sherwood Hotel, Philadelphia, Pa. Reception 6:30 p.m. For information: Robert Kunin, Rohm & Haas Co., Washington Square, Philadelphia 5, Pa.

Dec. 2, 1954. New York Chapter jointly with New York Section of the American Chemical Society. Carbide Cafeteria, 30 E. 42nd St., New York 17, N. Y. Dinner 5:45. Speaker, Allen Sack, Associate Director, Speed Reading Institute, "Speed Reading." Everyone present will participate in a speed reading demonstration. Question and answer period. Presiding chairman, John Kotrady. Reservations: Dr. John A. King, Warner-Chilcott Research Labs., 113 W. 18th St., New York 11, N. Y.

Dec. 15, 1954. National AIC Council and Board of Directors. The Chemists' Club, 52 East 41st St., New York 17, N. Y. Dinner 6:00 p.m.

Jan. 20, 1955. New York Chapter. East Ballroom, Hotel Commodore, 42nd St. & Lexington Ave., New York 17, N. Y. 6:00-7:00 p.m. Reception, Grand Foyer of East Ballroom, courtesy American Cyanamid Company. 7:00-8:00 p.m. Dinner. Informal. Honorary Chairman, Dr. Wallace P. Cohoe. Toastmaster, John Kotrady. Introduction, Dr. Robert C. Swain. Presentation of Honorary AIC Membership to Dr. Milton C. Whitaker, retired vice-president, American Cyanamid Co., Dr. Donald B. Keyes. Honor Recipient's Address, Dr. Milton C. Whitaker. Reservations: Shepherd Stigman, Foster D. Snell, Inc., 29 W. 15th St., New York 11, N. Y.

Feb. 4, 1955. Pennsylvania Chapter. Speaker, Dr. John Bockris of the University of Pennsylvania, "The Chemical Profession in England." For details: Robert Kunin, Rohm & Haas Co., Washington Square, Philadelphia 5, Pa.

Feb. 9, 1955. National AIC Council and Board of Directors. The Chemists' Club, 52 East 41st St., New York 17, N. Y. Dinner 6:00 p.m.

Feb. 24, 1955. New York Chapter. The New York Times Dining Room, 229 W. 43rd St., New York, N. Y. Dinner 6:00 p.m. Subject: "Advancing Yourself in Chemistry in the Pharmaceutical and Medical Fields." Question and answer period. Presiding Chairman, John Kotrady. Reservations (\$2.75), Shepherd Stigman, Foster D. Snell, Inc., 29 W. 15th St., New York 11, N. Y.

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April 7, 1955. Pennsylvania Chapter. Informal social evening. Refreshments and entertainment. For information: Robert Kunin, Rohm & Haas Co., Washington Square, Philadelphia 5, Pa.

April 13, 1955. National AIC Council and Board of Directors. The Chemists' Club, 52 East 41st St., New York 17, N. Y. Dinner 6:00 p.m.

April 15, 1955. Ohio Chapter. Annual Meeting. Mayflower Hotel, Akron, Ohio.

Apr. 28, 1955. New York Chapter. The New York Times Dining Room, 229 W. 43rd St., New York, N. Y. Dinner 6:00-7:30 p.m. Presentation of Awards to Student Medalists. Speaker Dr. A. W. Fisher, Jr., Arthur D. Little, Inc., "Algae as a Potential Future Source of Food." Question and answer period. Presiding chairman, John Kotrady. Reservations (\$2.75), Shepherd Stigman, Foster D. Snell, Inc., 29 W. 15th St., New York 11, N. Y.

May 5, 1955. Pennsylvania Chapter. Student Award Meeting. Mrs. (Dr.) E. J. Rosenbaum, formerly of Drexel Institute, will speak on "Women in The Chemical Profession."

May 11, 1955. National AIC Council and Board of Directors. The LaSalle Hotel, Chicago, Ill. Dinner 6:00 p.m.

May 11, 12, 13, 1955. AIC Annual Meeting. LaSalle Hotel, Chicago 2, Ill.

May 13, 1955. National AIC Council Breakfast. LaSalle Hotel, Chicago.

For Your Library

The Infra-red Spectra of Complex Molecules

By L. J. Bellamy. John Wiley & Sons, Inc. (1954). xviii + 323 pp. \$7.00.

Increasing use of infra-red spectra, to identify unknown compounds and to supply useful information on their structures, makes the need for correlations of available material ever more urgent. Dr. Bellamy has undertaken to review critically the uneven data on which infra-red investigations are based and to draw useful generalizations from the results. The aim throughout has been to provide broadly applicable correlations between observed spectra and the complex molecules represented by them. Thus the twenty-two chapters of the book are devoted principally to establishing the mutual effects of the different groups in complex molecules upon the absorption frequencies of each other.

The author reviews and evaluates a vast amount of published material and adds new data to it from his own observations. The result is a highly valuable tool for analyzing new spectra that greatly reduces the labor formerly required to find and compare widely scattered data in the literature. Organic chemists and spectroscopists will find this an essential volume for their guidance in research that involves infra-red techniques.

—D. H. KILLEFFER, F.A.I.C.

Non-Aqueous Solvents

Application as Media for Chemical Reactions. By Ludwig F. Audrieth and Jacob Kleinberg. John Wiley & Sons, Inc. 284 pp. Price \$6.75.

Two professors, one at the University of Illinois, the other at the University of Kansas, have collaborated in this presentation of a survey of non-aqueous solvent chemistry, which they hope will stimulate increased interest in this new approach to problems of synthesis. The book is written with genuine "missionary zeal" and begins with the quotation: "Much important chemistry, particularly important in the field of organic chemistry, has been obscured by a slavish devotion to water," from an article by James B. Conant and Norris F. Hall.

Beginning with the physical properties

of solvents and those special properties which determine their usefulness the authors discuss acids and bases, liquid ammonia and various of its derivatives, the three acid solvents; acetic and sulfuric acid and hydrogen fluoride, liquid sulfur dioxide, the acid chlorides, halogens and high-temperature systems.

Since the alcohols, glycols and ketones are missing from the solvents discussed here, this is not a comprehensive study of the subject, but it should fulfill its authors' hopes of stimulating interest in the possibilities of making more use industrially of non-aqueous solvents, especially at higher temperatures. And there is assembled here much information about the solvents included which should be theoretically interesting to many working in the synthetic field. Industrial applications are missing since the material for the book has been assembled largely for academic use.

—DR. FREDERICK A. HESSEL, F.A.I.C.

The Biochemistry of the Nucleic Acids

By J. N. Davidson. John Wiley & Sons, Inc. 1954. 200 pp. 4" x 6½". \$2.25.

In a brief introduction Prof. Davidson, who has brought his earlier work up to date in this fine monograph, discusses the general background of the nucleic acids and clarifies the confusing nomenclature. Next are studied the hydrolysis products of nucleic acids, methods of estimation, occurrence in tissue, cell cytoplasm, and cell nuclei, and the nucleases and related enzymes. Then follows a discussion of the metabolism, biosynthesis, and biological activity of the nucleic acids, concluding with a study of bacterial nucleic acids. Abundant references to the literature will aid those who wish to learn more. Numerous formulae, tables, diagrams, and plates give interest and clarity. Anyone interested in this complex phase of biochemistry will find the book invaluable.

—H. B. WYCKOFF

Autotrophic Microorganisms

J. L. Peel and B. A. Fry, editors. Cambridge University Press. 1954. 305 pp. 6" x 10". \$5.00.

This is a collection of thirteen papers concerning specific subjects on autotrophic microorganisms. These papers form the basis of short lectures presented before the

FOR YOUR LIBRARY

Fourth Symposium of the Society for General Microbiology held at London, April, 1954.

Autotrophs obtain carbon and nitrogen for growth from inorganic compounds. Their main source of energy is either sunlight or the energy liberated in simple inorganic oxidations. Heterotrophs, on the other hand, utilize more complex inorganic compounds for growth as well as for energy. The metabolism of thiobacilli, nitrifying bacteria, blue-green algae, green algae, photosynthesis, and the economic importance of autotrophic microorganisms are some of the subjects covered.

Investigators interested in the chemistry of microorganisms will find this an inspiring book.

—DR. HENRY TAUBER, F.A.I.C.

Technique of Organic Chemistry

By S. L. Friess and Arnold Weissberger, Editors. Vol. III. *Investigations of Rates and Mechanisms of Reactions*. Interscience Publishers. 760 pp. \$12.50.

One of a series devoted to the presentation of techniques used in the organic laboratory, this book is concerned with the theoretical and experimental tools used to establish the mechanisms of reactions. Since the determination of rates ranks foremost among these tools, the general theory of rate processes and the fundamental operations and measurements in obtaining rate data are given in detail. Reactions in both gaseous and liquid phases are discussed including catalyzed reactions in homogeneous systems, as well as polymerization and biochemical kinetics where special considerations and techniques apply.

The chapters are by university professors with only two exceptions: Chapter VI, *Reactions in the Liquid Phase*, part two in *Scientific Experimental Techniques*, is by B. Kathleen Morse, Flight Research Laboratory, Wright Patterson Air Force Base, and S. L. Friess, National Naval Medical Center; and Chapter VIII, *Polymerization and Polymer Reactions*, is by W. J. Priest of Eastman Kodak.

A subject index is given and at the end of the volume, the cumulative indexes for Volumes I-VIII of the series.

—DR. FREDERICK A. HESSEL, F.A.I.C.

Physical Chemistry

By A. J. Rutgers. *Interscience Publishers*. 804 pp. 6¼" x 9½". \$8.50.

This is an advanced treatise on physical chemistry from the kinetic viewpoint entirely, contrasting sharply with the usual physical chemistry based on the continuity of matter.

Organic Peroxides

By A. F. Tobolsky and R. B. Mesrobian, M.A.I.C. *Interscience Publishers, Inc.* 197 pp. 6¼" x 9¼". \$5.75.

This is an excellent treatise on the preparation, properties, stability, and uses of peroxides in vinyl polymerization. A list of commercially available peroxides is appended.

—DR. JOHN A. STEFFENS, F.A.I.C.

Chemical Books Abroad Rudolph Seiden, F.A.I.C.

Verlag Chemie, Weinheim/Bergstrasse: *Thermo-Mikro-Methoden*, by L. and A. Kofler and M. Brandstaetter; 3rd ed., 608 pp.; DM 39.80.— There are 247 drawings in this book and 235 pages of tables listing about 1,200 organic compounds to help aid the chemist in his identification by mean of thermo-micro-methods. In addition to Kofler's now famous micro-apparatus for the determination of the melting point (up to 350° C.), there are also his newer cooling stages (-55° to 80°), his high-temperature block (250° to 750°), and other, recently developed special equipment and methods described. • *Bilder zur qualitativen Mikroanalyse anorganischer Stoffe*, by W. Geilmann; 2nd ed.; 120 pp.; DM 20.80. — The micro-photos of 393 crystal reactions are reproduced on 50 tables, with information as to working methods and accuracy on the opposite pages. This is a most valuable practical guide for those interested in the qualitative micro-analysis of inorganic and metal-organic substances.

Vandenhoeck & Ruprecht, Goettingen: *Technisches Fachwoerterbuch der Grundstoff-Industries, Vol. II*, by G. Lenk and H. Boerner; 1954, 604 pp.; DM. 49.80 — The German-English part of this "Technical Dictionary for the Basic Industries" (the counterpart to the English-German

volume (I) which was reviewed in *THE CHEMIST* in March 1951) contains close to 60,000 terms and phrases used in mining, non-metallic mineral industry, metallurgy, building industry, and auxiliary industries and sciences. A helpful book for those reading German literature and business correspondence. • *Kurzes Handbuch der Chemie, Vol. III-IV*, by W. Koglin; 1954, 876 pp. This double-volume concludes the encyclopedia of 35,000 chemical compounds, listing those from Labiose to Zypressensamenöl (oil of cypress seed). The first 2 volumes were discussed in the February and September 1953 issues of *THE CHEMIST*. The supplementary Vol. V with working tables and many indexes, brings this monumental work up to 2,238 pages; the investment of DM 280.- in it seems a bargain if one considers the world of facts and figures compiled in its condensed text and very extensive tables.

Theodor Steinkopff, Dresden: *Kurze Einführung in die Kolloidchemie*, by A. Lottermoser and C. Kalauch; 3rd ed., 260 pp. (111 ill.); \$2.40 — A brief introduction into colloid chemistry, with emphasis on inorganic colloids.

Opportunities

Doris Eager, M.A.I.C.

AIC members who are seeking positions may place notices in this column without charge.

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Pharmaceutical chemist. Available at once. Doctor's degree. Experienced production supervisor in tablet, liquid, ointment and ampul department. Also experienced in research and new product development work. Desires position in pharmaceutical, cosmetic, or food industry. Box 112, *THE CHEMIST*.

Research Administration. Ph.D., Physical chemistry, 1949. Management background and personality. Excellent record. Age 32, family. Box 114, *THE CHEMIST*.

Organic Chemist, Ph.D. Sixteen years research and development experience, eight years as supervisor in industrial organic chemistry. Responsible for two important new developments in past ten years. Family. Box 116, *THE CHEMIST*.

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Something New

"Employee Testing: An Aid to Good Employee Selection & Placement," bulletin. Employee Relations Div., National Ass'n of Manufacturers, 2 East 48th St., New York 17, N. Y.

"A Report on Engineering Careers." A survey of alumni of Stevens Institute of Technology. Public Relations Office, Stevens Institute of Technology, Castle Point, Hoboken, N. J.

"Columbia Research News." News letter of research developments in the Science & Engineering Departments at Columbia University. Columbia Research News, Columbia Engineering Center, 4 West 43rd St., New York 36, N. Y.

W. J. Cotton Laboratories." Brochure. W. J. Cotton Labs., 3530 W. Fairmount Ave., Milwaukee 9, Wis.

"Educational Hobby Kit — Weather." Parts, dials, gauges, scales, charts, instructions. About \$25.00. "Industrial America," Inc., Merchandise Mart Plaza, Chicago 54, Ill.

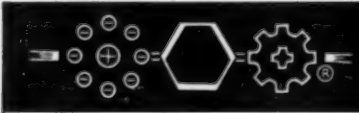
"Pictabs." Foam rubber tabs for tray bases or to hold picture frames from walls. 30 for \$1.00. House of Morrow, Dept. P4, Box 117, Wilmette, Ill.

"German Synthetic Waxes, P. B. Report PB34727." Translated by S. S. Cosman, reviewed by P. F. Dewey, F.A.I.C. Part A taken from Gersthofen Werke of the I. G. Farben A. G. Part B written in German by chemists in the Oppau Werke. \$7.50. P. F. Dewey, 3757 S. 14th St., Milwaukee 16, Wis.

"Pantex Plug Valve Actuators." Information. Pantex Manufacturing Corp., Pawtucket, R. I.

"Rubber-Phenolic Resin." Article in *Rubber Developments*. Request free copy from Natural Rubber Bureau, 1631 K St., N.W., Washington 6, D.C.

"Wireless Intercom, Port-A-Phone." Information. General Industrial Co., 5738 N. Elston Ave., Chicago, Ill.



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"Estonmite-50W. For control of spider mites." Booklet. Eston Chemicals Div., American Potash & Chemical Corp., 3100 E. 26th St., Los Angeles 23, Calif.

"New Technique for Detecting Low Atomic Elements by X-Ray Spectrograph." Information. Norelco Application Laboratory, North American Philips Co., Inc., Mount Vernon, N. Y.

"A Generalized Correlation of Flooding Rates. Part I, Spray Columns. Part II, Packed Columns." Reprint No. 24. 25 cents (no stamps). Engineering Experiment Station, Louisiana State University, Baton Rouge, La.

"Rust Prevention with Colloidal Zinc Primer." Trial ½ pint. \$2.50. Galvicon Corp., 40 West 29th St., New York 1, N. Y.

"Emergency Eye Washing Bottle." Information. Industrial Products Co., 2687 N. Fourth St., Philadelphia 33, Pa.

"Should Your Child Be a Chemist?" Article by Dr. Irving Langmuir. Educational Section, Public Relations Dept., New York Life Insurance Co., 51 Madison Ave., New York 10, N. Y.

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"Manual of Modern Instruments." Coleman Instruments, Inc., 318 Madison St., Maywood 1, Ill.

"New Photofluorometer. Model 12C." Bulletin B-230. Coleman Instruments, Inc., 318 Madison St., Maywood, Ill.

"Agrimul Pesticide Emulsifiers." Booklet. Dept. IMD, Nopco Chemical Co., Harrison, N. J.

"This is Blaw-Knox." 50 pp. brochure. Blaw-Knox Co., Farmers Bank Bldg., Pittsburgh 30, Pa.

"Isotopic Sugars Available." Information. Schwarz Laboratories, Inc., 230 Washington St., Mt. Vernon, N. Y.

"Ethylene Cyanohydrin." Information. Carbide & Carbon Chemicals Co., a Division of UCC, 30 E. 42nd St., New York 17, N. Y.

"Improvements in Dynamic Extractors." Podbielniak, Inc., 341 E. Ohio St., Chicago 11, Ill.

"Tech-Pen — New laboratory marking tool." Information. Palo Laboratory Supplies, Inc., 81 Reade St., New York 7, N. Y.

"Testing Equipment for Control Water Analyses." 12-pp Bulletin. W. H. & L. D. Betz, Gillingham & Worth Sts., Philadelphia 24, Pa.

"Gallon-Size Waring Blender." Information. Central Scientific Co., 1700 Irving Park Road, Chicago, Ill.

"Glycine Amide Hydrochloride." Information. Jasonols Chemical Corp., 825 East 42nd St., Brooklyn 10, N. Y.

"New Chromatography Catalog." 24 pp. Will Corporation, Rochester 3, N. Y.

"Exon Resins." Booklet. Chemical Sales Div., Firestone Plastics Co., Pottstown, Pa.

"Organic Sulfur Compounds." Information. Evans Chemetics, Inc., 250 E. 43rd St., New York 17, N. Y.

"Fatty Acids in Modern Industry." 24 pp. Catalog. A. Gross & Co., 295 Madison Ave., New York 17, N. Y.

"Biographical Memoirs, Vol. XXVIII." Includes F. G. Blake, medical research; G. S. Dunn, electrical engineer; M. L. Fernald, botanist; F. P. Gay, biologist; E. B. Hart, agricultural chemist; L. Hektoen, pathologist; R. A. Kelsner, bacteriologist; E. A. Sperry, inventor; G. L. Streeter, embryologist, and F. C. Whitmore, chemist. \$4.00. Columbia University Press, New York 27, N. Y.

"A Catalog of Personnel Materials." Copies are available to personnel, industrial relations, and management executives. Dept. XB, Science Research Associates, 57 West Grand Ave., Chicago 10, Ill.

"Daily Dozen" multiple rubber stamp bearing imprints of various types of postal directions, such as "Via Air Mail," etc. \$1.98. Cossman Stamp Co., 6612 Sunset Blvd., Hollywood 28, Calif.

"Ess Smoke Recorder." Bulletin 512. Ess Instrument Co., Bergenfield, N. J.

"High-Purity Carbon Rods for Spectrographic Analysis." Catalog. Stackpole Carbon Co., St. Mary's, Pa.

"Better Analysis." Periodically published by Baird Associates, Inc., 33 University Rd., Cambridge 38, Mass.

"Valves for the Process Industries." Catalog. The Gas Machinery Co., 16100 Waterloo Rd., Cleveland 10, Ohio.

Condensates

Ed. F. Degering, F.A.I.C.

Of all the natural resources with which this country is endowed, the predisposition to science is perhaps our greatest treasure.

—LEWIS L. STRAUSS

The earliest magnetic recording device was invented in 1898 and marketed in the United States in the early 1900's, but a recent demonstration of television from a magnetic recording may open a remarkable new era.

An inquiry into the relative weight of the particles of bodies is a subject as far as I know entirely new. I have lately been prosecuting the inquiry with remarkable success.

—JOHN DALTON (Oct. 3, 1803)

Travelers in the South Pacific may see Polynesian natives pounding water-soaked bark of the paper mulberry tree into a sheet of "Tapa cloth." The product is a form of paper much coarser than the papyrus of the ancient Egyptians or the paper made by Tsai Lun, 105 A.D.

Fireproof and water-repellent shingles are now being produced from silicone treated asbestos by Johns-Mansville.

Viscasil, a dimethyl polysiloxane, is a new water repellent for textiles. It remains unchanged after dry cleaning and laundering.

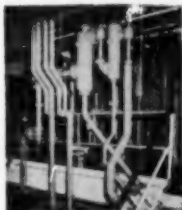
Oligomycin, a new antibiotic isolated by McCoy, Peterson, and Smith at the University of Wisconsin, shows considerable promise in the control of plant fungus diseases.

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